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The Impact of Smoking Cessation Education on Long-Term Care Pharmacy Employees' Willingness to Quit

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ABSTRACT:

The purpose of this study was to determine tobacco use rates among employees of long-term care pharmacies and utilization of smoking cessation education materials; to provide participants with education on the health risks of smoking, benefits of quitting, and approaches to successful cessation; and to assess the impact of education on participants' willingness to quit. An initial survey was distributed to employees of six long-term care pharmacy locations, where they identified as either a smoker or non-smoker. Following the survey, an email was sent on smoking cessation related topics in the form of a blog or video for six weeks. A survey was conducted post-education to assess for changes in willingness to quit. A total of 35 participants participated in the initial survey (27 non-smokers, never smoked; six non-smokers, previously smoked; and two current smokers). The two current smokers reported a willingness to quit of 5 or less. There were 21 lost to follow-up in the final survey; 14 participants in total participated (13 non-smokers, one current smoker). Of these 14 participants, nine preferred both blog and video education; two preferred blog, and three preferred videos. Data from the small subset of long-term care employees showed significance of health correlated to increased age and increased smoking behaviors. Initial survey showed that there was a lack of education awareness. Although the loss to follow-up was high, there is evidence that education appears to be helpful for the general population.

Keywords: smoking, cessation, education, tobacco treatment

INTRODUCTION:

Smoking continues to be a concern in the United States. According to a survey conducted by the CDC in 2015, there was an estimated 36.5 million adults who currently smoke cigarettes. [1,2] In the state of Ohio alone, 20.1 to < 23.7% of the population self-reported partaking in cigarette use.[2]

Among current studies on smoking cessation, major barriers impacting willingness to quit were self-reported by patients; these include lack of education on health risks, lack of education on treatment options for cessation, as well as financial concerns associated with smoking cessation. [3] Other studies that focused on patient education, discussed smoking cessation as a secondary issue in lieu of the major disease states for that practice, such as dental or cardiovascular complications. [4]

While there are many studies in regards to smoking cessation, there have been few in measuring willingness to quit; specifically, a lack of studies that combined the findings of the previous studies noted.

The purpose of this study was to determine tobacco use rates among employees of long-term care pharmacies and utilization of smoking cessation education materials; to provide participants with education on the health risks of smoking, benefits of quitting, and approaches to successful cessation; and to assess the impact of education on participants' willingness to quit.

METHODS:

DESIGN

An initial survey from Survey Monkey was distributed via email to employees of six long-

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term care pharmacy locations, in which they identified as either a smoker or non-smoker.

Participants were identified via a participant-generated identifier to maintain confidentiality. For smokers, additional questions were utilized to assess their smoking habits, and willingness to quit.

Following the survey, emails containing links to a short video on a smoking-related topic, were sent every Monday to all employees for 6 weeks. An additional email containing a link to the blog to access further information on the current week's smoking cessation topic was sent every Friday. Topics included components of a cigarette, health risks of smoking, benefits of quitting, costs, and methods to quit. After the 6-week education phase, a final survey was emailed to assess for changes in willingness to quit. Information was collected via password-protected Excel spreadsheet and analyzed.

SETTING AND STUDY POPULATION

This study took place in six different CVS/Omnicare locations, including Perrysburg, OH; Wadsworth, OH; Dover, OH; Grand Rapids, MI; Livonia, MI. Long-term care pharmacy employees were invited to participate in the initial survey. To participate in the study, individuals were required to meet the following eligibility criteria: 18 years of age and over; current CVS/Omnicare employee. The study was submitted for approval by the University of Toledo Social, Behavioral & Educational Institutional Review Board.

INTERVENTIONS

A twice-weekly intervention was made to provide education to participants in the study. Every Monday, a link to a video would be provided on the weekly smoking cessation topic. Every Friday, participants would receive a link to a blog post, giving further information about the weekly topic. These educational pieces were available throughout the study to allow for participants to view at their leisure. The weekly topics included: contents of a cigarette, health risks of smoking (which was divided to risks to self and risks to others), benefits of quitting, breakdown of costs from smoking, and an overview of both pharmacological and non-pharmacological options to aid in cessation. The educational material served to bring light to many misconceptions of smoking, such as the belief that filters protect the user from all the harmful chemicals, when in fact, many individuals cover the filters when holding the cigarette. For risks of smoking, a simplified explanation was given on how smoking can impact each part of the body, along with the risks that are passed along to those in their vicinity. With costs of smoking, the education served to break the misconception that treatment for smoking cessation costs more; we provided tables which projected, based on average costs of cigarettes, the overall financial impact it can have on the individual. The education concluded with treatment options, discussing tips for non-pharmacological interventions, while discussing pros and cons for each pharmacological option recommended.

PROCEDURES

Eligible participants provided informed consent via the disclosure statement provided at the beginning of the initial survey. Participants who provided consent proceeded to complete the initial survey. The initial survey aided participants in generating an identifier; this would be used to match responses provided in the final survey. In the initial survey, patients were to provide general demographic information, along with smoking history, if applicable. After completion of the survey, participants were sent an email every Monday and Friday for the following 6 weeks. To maintain anonymity, emails were sent to include all pharmacies within the region. If individuals not participating in the survey wanted to opt out of the emails, they were able to at any point in the study. At the end of the 6-

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week informational session, a final survey link was provided to assess for any changes in willingness to quit and preference in delivery of information.

A total of 280 long-term care employees were invited to participate in the study. Of the 280 employees, there were a total of 35 responses (12.5% response rate). Following the educational series, there were a total of 14 responses (14% response rate from the 35 responses in the initial survey).

MEASURES

Survey question was repeated in both initial and final survey to measure for willingness to quit. Participants were asked on a scale of 1 to 10 (1- not at all; 10- quit today), where they felt they were at in terms of their desire to quit.

Additionally, participants who reported as smokers, were asked to complete further questions about their smoking history, including how long they've been smoking, methods used to quit (if applicable), whether education had been received, and who they would quit for.

STATISTICAL ANALYSIS

Statistical analysis was performed using SPSS v25 (IBM SPSS Statistics for Windows, Armonk, NY, USA). Means, standard deviations, and frequencies were calculated.

RESULTS:

PARTICIPANT'S CHARACTERISTICS

Table 1 depicts the general demographics of the participants in the study. The majority of participants were female (82.9%), white (80%), age 25-34 (48.6%), and non-smokers, never smoked (77.1%). Of the 35 participants in the initial survey, there were 27 non-smokers, never smoked; six non-smokers, previously smoked; and two current smokers. In the final survey, there was about 60% loss to follow-up. Of the participants in the final survey, there were 13 non-smokers and one current smoker.

WILLINGNESS TO QUIT

Of the 35 participants in the initial survey, the two current smokers reported a willingness to quit of 5 or less. After six weeks of education, upon collection of the data from the final survey, there were 21 participants lost to follow-up. Of the 14 participants who completed the final survey, there was only one current smoker who reported a willingness to quit of 5. However, due to inability to match the participant identifier from the final survey to the initial survey, the participant's baseline is unknown. The participant did report a desire to make an attempt to quit.

EDUCATION

Among the 35 participants in the initial survey, only eight participants reported receiving education on smoking cessation, five of which were the non-smokers, never smoked. About 77% reported never receiving any form of education on smoking cessation (primary care provider, pharmacist, minute clinic, family member, friend, or other).

In the final survey, of the 14 who participated, the preferred method for delivery of education was the combination of the blog and video (nine preferred both; two preferred blog, and three preferred video).

DISCUSSION:

As the number for smokers continues to remain high, there continues to be a lack of thorough education provided. From the initial survey alone, both smokers and non-smokers report never receiving education on smoking cessation, whether that be from a healthcare provider, a friend, or other source. However, in our study population, it was noted that there are individuals that are aware that there is

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education and a significant correlation for awareness that this education is free.

Our study did give some valuable insights into smoking cessation. First, it provided thorough education for participants, without overwhelming them; participants were allowed to, at their own leisure, review the material. Part of the issue with managing any disease state is overwhelming our patients with too much information at once, because in reality, how much did they really absorb. Our format allowed participants to use our information as tools and resources to refer back to at a later time when needed. Another strength was the anonymity; to allow participants to participate without the fear of being identified.

However, like many other studies, we did have our limitations. First off, our sample size was not what we had hoped for (goal was 100 participants). Another limitation was the participants lost to follow-up, which made it difficult to see a strong correlation in willingness to quit. Especially in the case of the one participant who had reported that they would make an attempt to quit; this makes it difficult to see a change as there was no baseline to go off of.

Our study found that similar to other studies, there continues to be a lack of education noted by patients on smoking cessation. While the preferred method of delivery of that information may differ amongst patients, our issue lies with the dissemination of this information, specifically to the smoking population. Further studies continue to be warranted to identify methods to increase the number of participants.

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IRB # 202413
ICF Version Date: 2/9/2018

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Toledo, Ohio 43614
(419)383-1924
(419)383-1950

ADULT RESEARCH SUBJECT - INFORMED CONSENT FORM

The impact of smoking cessation education on long-term care pharmacy employees' willingness to quit

Principal Investigator: Aaron Lengel, Principal Investigator, (419)383-1924;
Ellie Kang, Co-investigator, (617)987-7193

Purpose: You are invited to participate in the research project entitled, The impact of smoking cessation education on long-term care pharmacy employees' willingness to quit, which is being conducted at the University of Toledo under the direction of Aaron Lengel, Ellie Kang, et al. The purpose of this study is to determine tobacco use rates among employees of long-term care pharmacies and utilization of smoking cessation education materials, to provide participants with education on the health risks of smoking, benefits of quitting, and approaches to successful cessation, and to assess the impact of education on participants' willingness to quit smoking.

Description of Procedures: This research study will take place in Ohio, requiring about 5-to-10 minutes of the participants' time, twice a week for the next 6 weeks. You will be asked to participate in a survey to gather background information. After the first survey, you will have 6 weeks of videos and blog entries to give you education on smoking. A final survey will be taken after 6 weeks to get your feedback.

After you have completed your participation, the research team will debrief you about the data, theory and research area under study and answer any questions you may have about the research.

Potential Risks: There are minimal risks to participation in this study, including loss of confidentiality or psychological concerns (such as discussing risks of smoking or topics that may not be considerably easy to discuss). Your condition may not get better or may become worse while you are in this study.

Potential Benefits: The only direct benefit to you if you participate in this research may be that you will learn about how research is run and may learn more about smoking. Others may benefit by learning about the results of this research. Upon completion of the research, participants will also receive a $5 gift card to Starbucks.

Confidentiality: The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. The consent forms with signatures will be kept separate from responses, which will not include names and which will be presented to others only when combined with other responses. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached.

Voluntary Participation: Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo or any of your classes, or employment. In addition, you may discontinue participation at any time without any penalty or loss of benefits.

University of Toledo IRB Approved
Approval Date: 2/7/2018
Expiration Date: 2/6/2019

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IRB # 202413

ICF Version Date: 2/9/2018

Contact Information: Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation, you should contact a member of the research team (Ellie Kang, (617)987-7193)

If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, the Chairperson of the SBE Institutional Review Board may be contacted through the Office of Research on the main campus at (419) 530-2844.

You are making a decision whether or not to participate in this research study. By completing this survey you indicated that you have read the information provided above, you have had all your questions answered, and you have decided to take part in this research.

University of Toledo IRB Approved
Approval Date: 2/7/2018
Expiration Date: 2/6/2019

Adult Informed Consent *Revised 11.05.10* *Page 2 of 2*

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The University of Toledo
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Social, Behavioral and Educational Institutional Review Board
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Phone: 419-530-2844 Fax: 419-530-2841
(FWA00010686)

IRB APPROVAL NOTIFICATION

Principal Investigator:	Aaron Lengel
Protocol Title:	The impact of smoking cessation education on long-term care pharmacy employees' willingness to quit
IRB Number:	0000202413
Review Method:	Expedited

Review Category:

5. Research involving materials (data, documents, ...
6. Collection of data from voice, video, digital, ...
7. Research on individual or group characteristics...

Date of Approval:	02/07/2018
The current expiration date for this study:	02/06/2019

- Per Federal regulation, changes MAY NOT be made to any element of the current research without prior IRB approval, except to eliminate and immediate and apparent hazard to subjects enrolled in the trial.
- Per Federal regulation, the research may not continue without IRB approval. You must submit a request for continuation at least 6-8 weeks prior to the expiration date noted above. Once the study is complete, the IRB requires prompt notification of study closure.
- Failure to retain current IRB approval may result in archiving the current study and human subjects non-compliance allegations.

Documents reviewed and/or approved as part of this submission:
Site Permission Letter, Dan Haron_Approval.doc, 02/07/2018
Site Permission Letter, Will Abbott_Approval.doc, 02/07/2018
Data Collection Tool, Initial Survey_v2_10252017.docx, 02/07/2018
Data Collection Tool, Final Survey_v2_10252017.docx, 02/07/2018
Activities Preparatory to Research, Education_1_v2(with dialogue).pptx, 02/07/2018
Activities Preparatory to Research, Education_2_v2(with dialogue).pptx, 02/07/2018
Activities Preparatory to Research, Education_3_v2(with dialogue).pptx, 02/07/2018
Activities Preparatory to Research, Education_4_v2(with dialogue).pptx, 02/07/2018
Activities Preparatory to Research, Education_5_v2(with dialogue).pptx, 02/07/2018
Activities Preparatory to Research, Education_6_v2(with dialogue).pptx, 02/07/2018
Data Collection Tool, Research_Tracking_IRB.xlsx, 02/07/2018
Protocol Narrative, RESEARCH PROTOCOL_Ellie_V3.docx, 02/07/2018
Activities Preparatory to Research, Blog_1.docx, 02/07/2018
Activities Preparatory to Research, Blog_3.docx, 02/07/2018
Activities Preparatory to Research, Blog_4.docx, 02/07/2018
Activities Preparatory to Research, Blog_5.docx, 02/07/2018
Activities Preparatory to Research, Blog_6.docx, 02/07/2018
Advertisement (flyer, newspaper ad, radio spot), Email Templates_v2_10252017.docx, 02/07/2018
Activities Preparatory to Research, Blog_2.docx, 02/07/2018
Informed Consent Form (ICF), SBE_Adult_Consent_Template_Ellie Kang.doc, 02/07/2018

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Vulnerable Populations included in the study: Adults

Please note the following important items :

1. This research approval is in effect until the expiration date listed above, unless the IRB notifies you otherwise.
2. Please read the following attachment detailing Principal Investigator Responsibilities.
3. If Consent/Assent/Authorization documents are applicable, only the most recent IRB approved Consent/Assent/Authorization form(s) listed above may be used when enrolling participants into research.

The University of Toledo
Social, Behavioral and Educational IRB
IRB.SBE@utoledo.edu

Date: 02/09/2018

Signed: